9/19 # 8

OIPE

RAW SEQUENCE LISTING   DATE: 09/26/2002
PATENT APPLICATION: US/10/076,604   TIME: 09:32:53

Input Set : N:\Crf3\RULE60\10076604.raw
Output Set: N:\CRF4\09252002\J076604.raw

SEQUENCE LISTING
```
 1 (1) GENERAL INFORMATION:
 2      (i) APPLICANT: White, Tyler R.
 3                    Damm, Deborah
 4                    Lesikar, David D.
 5                    McFadden, Kathleen
 6                    Garrick, Brett L.
 7     (ii) TITLE OF INVENTION: PROTEASE INHIBITOR PEPTIDES
 8    (iii) NUMBER OF SEQUENCES: 228
 9     (iv) CORRESPONDENCE ADDRESS:
10          (A) ADDRESSEE: Foley & Lardner
11          (B) STREET: 3000 K Street, N.W., Suite 500
12          (C) CITY: Washington
13          (D) STATE: D.C.
14          (E) COUNTRY: USA
15          (F) ZIP: 20007-5109
16      (v) COMPUTER READABLE FORM:
17          (A) MEDIUM TYPE: Floppy disk
18          (B) COMPUTER: IBM PC compatible
19          (C) OPERATING SYSTEM: PC-DOS/MS-DOS
20          (D) SOFTWARE: PatentIn Release #1.0, Version #1.30
21     (vi) CURRENT APPLICATION DATA:
22          (A) APPLICATION NUMBER: US/10/076,604
23          (B) FILING DATE: 19-Feb-2002
24    (vii) PRIOR APPLICATION DATA:
25          (A) APPLICATION NUMBER: US/09/201,715
26          (B) FILING DATE: 01-Dec-1998
27          (A) APPLICATION NUMBER: US 08/436,555
28          (B) FILING DATE: 08-MAY-1995
29   (viii) ATTORNEY/AGENT INFORMATION:
30          (A) NAME: Pelto, Don J.
31          (B) REGISTRATION NUMBER: 33,754
32          (C) REFERENCE/DOCKET NUMBER: 56324/117
33     (ix) TELECOMMUNICATION INFORMATION:
34          (A) TELEPHONE: (202)672-5300
35          (B) TELEFAX: (202)672-5399
36          (C) TELEX: 904136
37 (2) INFORMATION FOR SEQ ID NO: 1:
38      (i) SEQUENCE CHARACTERISTICS:
39          (A) LENGTH: 57 amino acids
40          (B) TYPE: amino acid
41          (C) STRANDEDNESS: single
42          (D) TOPOLOGY: linear
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C--> 22
C--> 23

ENTERED

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            RAW SEQUENCE LISTING            DATE: 09/26/2002
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                 Input Set : N:\Crf3\RULE60\10076604.raw
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```
        43      (ii) MOLECULE TYPE: protein
        44      (xi) SEQUENCE DESCRIPTION: SEQ ID NO: 1:
W--> 45          Xaa Val Cys Ser Glu Gln Ala Glu Xaa Gly Xaa Cys Arg Ala Xaa Xaa
        46          1               5               10              15
W--> 47          Xaa Xaa Trp Tyr Phe Asp Val Thr Glu Gly Lys Cys Ala Pro Phe Xaa
        48                   .   20              25              30
W--> 49          Tyr Gly Gly Cys Xaa Xaa Xaa Xaa Asn Asn Phe Asp Thr Glu Glu Tyr
        50                   35              40              45
        51          Cys Met Ala Val Cys Gly Ser Ala Ile
        52                   50              55
        54 (2) INFORMATION FOR SEQ ID NO: 2:
        55      (i) SEQUENCE CHARACTERISTICS:
        56          (A) LENGTH: 5 amino acids
        57          (B) TYPE: amino acid
        58          (C) STRANDEDNESS: single
        59          (D) TOPOLOGY: linear
        60      (ii) MOLECULE TYPE: protein
        61      (xi) SEQUENCE DESCRIPTION: SEQ ID NO: 2:
        62          Glu Val Val Arg Glu
        63          1               5
        65 (2) INFORMATION FOR SEQ ID NO: 3:
        66      (i) SEQUENCE CHARACTERISTICS:
        67          (A) LENGTH: 57 amino acids
        68          (B) TYPE: amino acid
        69          (C) STRANDEDNESS: single
        70          (D) TOPOLOGY: linear
        71      (ii) MOLECULE TYPE: protein
        72      (xi) SEQUENCE DESCRIPTION: SEQ ID NO: 3:
W--> 73          Xaa Val Cys Ser Glu Gln Ala Glu Thr Gly Pro Cys Arg Ala Xaa Xaa
        74          1               5               10              15
W--> 75          Xaa Arg Trp Tyr Phe Asp Val Thr Glu Gly Lys Cys Ala Pro Phe Phe
        76                   20              25              30
W--> 77          Tyr Gly Gly Cys Xaa Gly Asn Arg Asn Asn Phe Asp Thr Glu Glu Tyr
        78                   35              40              45
        79          Cys Met Ala Val Cys Gly Ser Ala Ile
        80                   50              55
        82 (2) INFORMATION FOR SEQ ID NO: 4:
        83      (i) SEQUENCE CHARACTERISTICS:
        84          (A) LENGTH: 61 amino acids
        85          (B) TYPE: amino acid
        86          (C) STRANDEDNESS: single
        87          (D) TOPOLOGY: linear
        88      (ii) MOLECULE TYPE: protein
        89      (xi) SEQUENCE DESCRIPTION: SEQ ID NO: 4:
        90          Glu Val Val Arg Glu Val Cys Ser Glu Gln Ala Glu Thr Gly Pro Cys
        91          1               5               10              15
W--> 92          Arg Ala Xaa Xaa Xaa Arg Trp Tyr Phe Asp Val Thr Glu Gly Lys Cys
        93                   20              25              30
W--> 94          Ala Pro Phe Phe Tyr Gly Gly Cys Xaa Gly Asn Arg Asn Asn Phe Asp
```

```
 95                35              40              45
 96              Thr Glu Glu Tyr Cys Met Ala Val Cys Gly Ser Ala Ile
 97                50              55              60
 99 (2) INFORMATION FOR SEQ ID NO: 5:
100      (i) SEQUENCE CHARACTERISTICS:
101          (A) LENGTH: 57 amino acids
102          (B) TYPE: amino acid
103          (C) STRANDEDNESS: single
104          (D) TOPOLOGY: linear
105      (ii) MOLECULE TYPE: protein
106      (xi) SEQUENCE DESCRIPTION: SEQ ID NO: 5:
W--> 107          Xaa Val Cys Ser Glu Gln Ala Glu Xaa Gly Pro Cys Arg Ala Xaa Xaa
     108          1               5               10              15
W--> 109          Xaa Xaa Trp Tyr Phe Asp Val Thr Glu Gly Lys Cys Ala Pro Phe Phe
     110                          20              25              30
W--> 111          Tyr Gly Gly Cys Xaa Gly Asn Arg Asn Asn Phe Asp Thr Glu Glu Tyr
     112                          35              40              45
     113          Cys Met Ala Val Cys Gly Ser Ala Ile
     114                          50              55
116 (2) INFORMATION FOR SEQ ID NO: 6:
117      (i) SEQUENCE CHARACTERISTICS:
118          (A) LENGTH: 59 amino acids
119          (B) TYPE: amino acid
120          (C) STRANDEDNESS: single
121          (D) TOPOLOGY: linear
122      (ii) MOLECULE TYPE: protein
123      (xi) SEQUENCE DESCRIPTION: SEQ ID NO: 6:
124          Val Arg Glu Val Cys Ser Glu Gln Ala Glu Thr Gly Pro Cys Arg Ala
125          1               5               10              15
126          Met Ile Ser Arg Trp Tyr Phe Asp Val Thr Glu Gly Lys Cys Ala Pro
127                          20              25              30
128          Phe Phe Tyr Gly Gly Cys Gly Gly Asn Arg Asn Asn Phe Asp Thr Glu
129                          35              40              45
130          Glu Tyr Cys Met Ala Val Cys Gly Ser Ala Ile
131                          50              55
133 (2) INFORMATION FOR SEQ ID NO: 7:
134      (i) SEQUENCE CHARACTERISTICS:
135          (A) LENGTH: 58 amino acids
136          (B) TYPE: amino acid
137          (C) STRANDEDNESS: single
138          (D) TOPOLOGY: linear
139      (ii) MOLECULE TYPE: protein
140      (xi) SEQUENCE DESCRIPTION: SEQ ID NO: 7:
141          Arg Pro Asp Phe Cys Leu Glu Pro Pro Tyr Thr Gly Pro Cys Lys Ala
142          1               5               10              15
143          Arg Ile Ile Arg Tyr Phe Tyr Asn Ala Lys Ala Gly Leu Cys Gln Thr
144                          20              25              30
145          Phe Val Tyr Gly Gly Cys Arg Ala Lys Arg Asn Asn Phe Lys Ser Ala
146                          35              40              45
```

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        Input Set : N:\Crf3\RULE60\10076604.raw
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```
147             Glu Asp Cys Met Arg Thr Cys Gly Gly Ala
148                  50                    55
150 (2) INFORMATION FOR SEQ ID NO: 8:
151     (i) SEQUENCE CHARACTERISTICS:
152             (A) LENGTH: 4 amino acids
153             (B) TYPE: amino acid
154             (C) STRANDEDNESS: single
155             (D) TOPOLOGY: linear
156     (ii) MOLECULE TYPE: protein
157     (xi) SEQUENCE DESCRIPTION: SEQ ID NO: 8:
158             Glu Val Val Arg
159             1
161 (2) INFORMATION FOR SEQ ID NO: 9:
162     (i) SEQUENCE CHARACTERISTICS:
163             (A) LENGTH: 79 base pairs
164             (B) TYPE: nucleic acid
165             (C) STRANDEDNESS: single
166             (D) TOPOLOGY: linear
167     (ii) MOLECULE TYPE: DNA (genomic)
168     (xi) SEQUENCE DESCRIPTION: SEQ ID NO: 9:
169      TATGAAACAA AGCACTATTG CACTGGCACT CTTACCGTTA CTGTTTACCC CTGTGACAAA    60
170      AGCCGAGGTG TGCTCTGAA                                                79
172 (2) INFORMATION FOR SEQ ID NO: 10:
173     (i) SEQUENCE CHARACTERISTICS:
174             (A) LENGTH: 67 base pairs
175             (B) TYPE: nucleic acid
176             (C) STRANDEDNESS: single
177             (D) TOPOLOGY: linear
178     (ii) MOLECULE TYPE: DNA (genomic)
179     (xi) SEQUENCE DESCRIPTION: SEQ ID NO: 10:
180      CTCGGCTTTT GTCACAGGGG TAAACAGTAA CGGTAAGAGT GCCAGTGCAA TAGTGCTTTG    60
181      TTTCATA                                                            67
183 (2) INFORMATION FOR SEQ ID NO: 11:
184     (i) SEQUENCE CHARACTERISTICS:
185             (A) LENGTH: 81 base pairs
186             (B) TYPE: nucleic acid
187             (C) STRANDEDNESS: single
188             (D) TOPOLOGY: linear
189     (ii) MOLECULE TYPE: DNA (genomic)
190     (xi) SEQUENCE DESCRIPTION: SEQ ID NO: 11:
191      CAAGCTGAGA CCGGTCCGTG CCGTGCAATG ATCTCCCGCT GGTACTTTGA CGTCACTGAA    60
192      GGTAAGTGCG CTCCATTCTT T                                            81
194 (2) INFORMATION FOR SEQ ID NO: 12:
195     (i) SEQUENCE CHARACTERISTICS:
196             (A) LENGTH: 81 base pairs
197             (B) TYPE: nucleic acid
198             (C) STRANDEDNESS: single
199             (D) TOPOLOGY: linear
200     (ii) MOLECULE TYPE: DNA (genomic)
```

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Input Set : N:\Crf3\RULE60\10076604.raw
Output Set: N:\CRF4\09252002\J076604.raw

```
201      (xi) SEQUENCE DESCRIPTION: SEQ ID NO: 12:
202       GCACTTACCT TCAGTGACGT CAAAGTACCA GCGGGAGATC ATTGCACGGC ACGGACCGGT      60
203       CTCAGCTTGT TCAGAGCACA C                                                81
205  (2) INFORMATION FOR SEQ ID NO: 13:
206       (i) SEQUENCE CHARACTERISTICS:
207           (A) LENGTH: 81 base pairs
208           (B) TYPE: nucleic acid
209           (C) STRANDEDNESS: single
210           (D) TOPOLOGY: linear
211      (ii) MOLECULE TYPE: DNA (genomic)
212      (xi) SEQUENCE DESCRIPTION: SEQ ID NO: 13:
213       TACGGCGGTT GCGGCGGCAA CCGTAACAAC TTTGACACTG AAGAGTACTG CATGGCAGTG      60
214       TGCGGATCCG CTATTTAAGC T                                                81
216  (2) INFORMATION FOR SEQ ID NO: 14:
217       (i) SEQUENCE CHARACTERISTICS:
218           (A) LENGTH: 93 base pairs
219           (B) TYPE: nucleic acid
220           (C) STRANDEDNESS: single
221           (D) TOPOLOGY: linear
222      (ii) MOLECULE TYPE: DNA (genomic)
223      (xi) SEQUENCE DESCRIPTION: SEQ ID NO: 14:
224       AGCTTAAATA GCGGATCCGC ACACTGCCAT GCAGTACTCT TCAGTGTCAA AGTTGTTACG      60
225       GTTGCCGCCG CAACCGCCGT AAAAGAATGG AGC                                  93
227  (2) INFORMATION FOR SEQ ID NO: 15:
228       (i) SEQUENCE CHARACTERISTICS:
229           (A) LENGTH: 37 base pairs
230           (B) TYPE: nucleic acid
231           (C) STRANDEDNESS: single
232           (D) TOPOLOGY: linear
233      (ii) MOLECULE TYPE: DNA (genomic)
234      (xi) SEQUENCE DESCRIPTION: SEQ ID NO: 15:
235       CTAGATAAAA GAGAGGTGTG CTCTGAACAA GCTGAGA                              37
237  (2) INFORMATION FOR SEQ ID NO: 16:
238       (i) SEQUENCE CHARACTERISTICS:
239           (A) LENGTH: 37 base pairs
240           (B) TYPE: nucleic acid
241           (C) STRANDEDNESS: single
242           (D) TOPOLOGY: linear
243      (ii) MOLECULE TYPE: DNA (genomic)
244      (xi) SEQUENCE DESCRIPTION: SEQ ID NO: 16:
245       CCGGTCTCAG CTTGTTCAGA GCACACCTCT CTTTTAT                              37
247  (2) INFORMATION FOR SEQ ID NO: 17:
248       (i) SEQUENCE CHARACTERISTICS:
249           (A) LENGTH: 49 base pairs
250           (B) TYPE: nucleic acid
251           (C) STRANDEDNESS: single
252           (D) TOPOLOGY: linear
253      (ii) MOLECULE TYPE: DNA (genomic)
254      (xi) SEQUENCE DESCRIPTION: SEQ ID NO: 17:
```

RAW SEQUENCE LISTING ERROR SUMMARY   DATE: 09/26/2002
PATENT APPLICATION: US/10/076,604   TIME: 09:32:54

Input Set : **N:\Crf3\RULE60\10076604.raw**
Output Set: **N:\CRF4\09252002\J076604.raw**

<u>Please Note:</u>
Use of n and/or Xaa have been detected in the Sequence Listing. Please review the
Sequence Listing to ensure that a corresponding explanation is presented in the <220>
to <223> fields of each sequence which presents at least one n or Xaa.

Seq#:1; Xaa Pos.1,9,11,15,16,17,18,32,37,38,39,40
Seq#:3; Xaa Pos.1,15,16,17,37
Seq#:4; Xaa Pos.19,20,21,41
Seq#:5; Xaa Pos.1,9,15,16,17,18,37
Seq#:63; N Pos. 24
Seq#:66; N Pos. 22,26
Seq#:67; N Pos. 22
Seq#:102; N Pos. 103,104,106,107,109,110,112,113
Seq#:102; Xaa Pos.268,269,270,271
Seq#:103; Xaa Pos.35,36,37,38

VERIFICATION SUMMARY   DATE: 09/26/2002
PATENT APPLICATION: US/10/076,604   TIME: 09:32:54

Input Set : **N:\Crf3\RULE60\10076604.raw**
Output Set: **N:\CRF4\09252002\J076604.raw**

```
L:22 M:220 C: Keyword misspelled or invalid format, [(A) APPLICATION NUMBER:]
L:23 M:220 C: Keyword misspelled or invalid format, [(B) FILING DATE:]
L:45 M:341 W: (46) "n" or "Xaa" used, for SEQ ID#:1 after pos.:0
L:47 M:341 W: (46) "n" or "Xaa" used, for SEQ ID#:1 after pos.:16
L:49 M:341 W: (46) "n" or "Xaa" used, for SEQ ID#:1 after pos.:32
L:73 M:341 W: (46) "n" or "Xaa" used, for SEQ ID#:3 after pos.:0
L:75 M:341 W: (46) "n" or "Xaa" used, for SEQ ID#:3 after pos.:16
L:77 M:341 W: (46) "n" or "Xaa" used, for SEQ ID#:3 after pos.:32
L:92 M:341 W: (46) "n" or "Xaa" used, for SEQ ID#:4 after pos.:16
L:94 M:341 W: (46) "n" or "Xaa" used, for SEQ ID#:4 after pos.:32
L:107 M:341 W: (46) "n" or "Xaa" used, for SEQ ID#:5 after pos.:0
L:109 M:341 W: (46) "n" or "Xaa" used, for SEQ ID#:5 after pos.:16
L:111 M:341 W: (46) "n" or "Xaa" used, for SEQ ID#:5 after pos.:32
L:885 M:336 W: Invalid Amino Acid Number in Coding Region, SEQ ID:76
L:888 M:336 W: Invalid Amino Acid Number in Coding Region, SEQ ID:76
L:891 M:336 W: Invalid Amino Acid Number in Coding Region, SEQ ID:76
L:894 M:336 W: Invalid Amino Acid Number in Coding Region, SEQ ID:76
L:925 M:336 W: Invalid Amino Acid Number in Coding Region, SEQ ID:78
L:928 M:336 W: Invalid Amino Acid Number in Coding Region, SEQ ID:78
L:931 M:336 W: Invalid Amino Acid Number in Coding Region, SEQ ID:78
L:934 M:336 W: Invalid Amino Acid Number in Coding Region, SEQ ID:78
L:969 M:336 W: Invalid Amino Acid Number in Coding Region, SEQ ID:80
L:972 M:336 W: Invalid Amino Acid Number in Coding Region, SEQ ID:80
L:975 M:336 W: Invalid Amino Acid Number in Coding Region, SEQ ID:80
L:978 M:336 W: Invalid Amino Acid Number in Coding Region, SEQ ID:80
L:981 M:336 W: Invalid Amino Acid Number in Coding Region, SEQ ID:80
L:984 M:336 W: Invalid Amino Acid Number in Coding Region, SEQ ID:80
L:987 M:336 W: Invalid Amino Acid Number in Coding Region, SEQ ID:80
L:990 M:336 W: Invalid Amino Acid Number in Coding Region, SEQ ID:80
L:993 M:336 W: Invalid Amino Acid Number in Coding Region, SEQ ID:80
L:996 M:336 W: Invalid Amino Acid Number in Coding Region, SEQ ID:80
L:1039 M:336 W: Invalid Amino Acid Number in Coding Region, SEQ ID:82
L:1042 M:336 W: Invalid Amino Acid Number in Coding Region, SEQ ID:82
L:1045 M:336 W: Invalid Amino Acid Number in Coding Region, SEQ ID:82
L:1048 M:336 W: Invalid Amino Acid Number in Coding Region, SEQ ID:82
L:1051 M:336 W: Invalid Amino Acid Number in Coding Region, SEQ ID:82
L:1054 M:336 W: Invalid Amino Acid Number in Coding Region, SEQ ID:82
L:1057 M:336 W: Invalid Amino Acid Number in Coding Region, SEQ ID:82
L:1060 M:336 W: Invalid Amino Acid Number in Coding Region, SEQ ID:82
L:1063 M:336 W: Invalid Amino Acid Number in Coding Region, SEQ ID:82
L:1108 M:336 W: Invalid Amino Acid Number in Coding Region, SEQ ID:84
L:1111 M:336 W: Invalid Amino Acid Number in Coding Region, SEQ ID:84
L:1114 M:336 W: Invalid Amino Acid Number in Coding Region, SEQ ID:84
L:1117 M:336 W: Invalid Amino Acid Number in Coding Region, SEQ ID:84
L:1120 M:336 W: Invalid Amino Acid Number in Coding Region, SEQ ID:84
L:1123 M:336 W: Invalid Amino Acid Number in Coding Region, SEQ ID:84
L:1126 M:336 W: Invalid Amino Acid Number in Coding Region, SEQ ID:84
L:1129 M:336 W: Invalid Amino Acid Number in Coding Region, SEQ ID:84
```

VERIFICATION SUMMARY   DATE: 09/26/2002
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Input Set : **N:\Crf3\RULE60\10076604.raw**
Output Set: **N:\CRF4\09252002\J076604.raw**

```
L:1132 M:336 W: Invalid Amino Acid Number in Coding Region, SEQ ID:84
L:1177 M:336 W: Invalid Amino Acid Number in Coding Region, SEQ ID:86
L:1180 M:336 W: Invalid Amino Acid Number in Coding Region, SEQ ID:86
L:1183 M:336 W: Invalid Amino Acid Number in Coding Region, SEQ ID:86
L:1186 M:336 W: Invalid Amino Acid Number in Coding Region, SEQ ID:86
L:1189 M:336 W: Invalid Amino Acid Number in Coding Region, SEQ ID:86
L:1192 M:336 W: Invalid Amino Acid Number in Coding Region, SEQ ID:86
L:1195 M:336 W: Invalid Amino Acid Number in Coding Region, SEQ ID:86
L:1198 M:336 W: Invalid Amino Acid Number in Coding Region, SEQ ID:86
L:1201 M:336 W: Invalid Amino Acid Number in Coding Region, SEQ ID:86
L:1246 M:336 W: Invalid Amino Acid Number in Coding Region, SEQ ID:88
L:1249 M:336 W: Invalid Amino Acid Number in Coding Region, SEQ ID:88
L:1252 M:336 W: Invalid Amino Acid Number in Coding Region, SEQ ID:88
L:1255 M:336 W: Invalid Amino Acid Number in Coding Region, SEQ ID:88
L:1258 M:336 W: Invalid Amino Acid Number in Coding Region, SEQ ID:88
L:1760 M:341 W: (46) "n" or "Xaa" used, for SEQ ID#:102 after pos.:144
L:1810 M:341 W: (46) "n" or "Xaa" used, for SEQ ID#:103 after pos.:32
```